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First H- Beam Extracted from the Non-Caesiated External RF-Coil Ion Source at ISIS

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A high power, high duty-cycle, negative hydrogen ion source is in development at ISIS. Stable operation of an inductively-coupled plasma pulsing at 50 Hz, 1 ms, 70 kW has been perfected with no apparent lifetime issues. Novel features of the ion source include an external RF-coil, a very low power ignition gun, an adjustable permanent magnet filter field, a water cooling jacket and multiple large 3D-printed components. First beam has been extracted from the ion source and the commissioning efforts required to achieve it are presented herein.

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